REMARKS

Claims 1-9, 11-21 and 23-24 are pending. By this Amendment, Claims 1-2, 7, 11-12, 14 and 21 are amended and Claim 10 is canceled.

In the Office Action, the Examiner rejects Claims 1-21 and 23-24 under 35 U.S.C. § 103(a) over U.S. Patent No. 4,949,022 to Lipman (Lipman) in view of U.S. Patent No. 2,413,525 to Smith (Smith). This rejection is respectfully traversed.

Lipman is directed to a fan that includes fan blades 42 and an electric motor driving the fan blades 42, where fan blades 42 are formed in the center of the electric motor's rotor as shown for example in Figure 2. The casing of the motor and fan is open instead of sealed, as shown in Figure 2, because the purpose of Lipman's fan is to move or circulate air in an environment external to the fan, for example to force air into or out of a vented case or housing containing electrical equipment or components, such as the case or housing of a personal computer. See, for example: the Abstract; the Field of the Invention; the Figures; and column 3, lines 1-31.

The Examiner has failed to establish a *prima facie* case of obviousness because there is no motivation to modify Lipman with the teachings of Smith to arrive at the presently claimed invention. Specifically, the Federal Circuit Court of Appeals established a rule in *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984), which states that if the proposed modification would render the prior art invention being modified unsuitable for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See also MPEP § 2143.01, page 2100-127. Sealing the casing of Lipman's

fan to provide a closed cooling fluid path entirely within the fan would render Lipman's fan unsatisfactory for its intended purpose of moving or circulating air in an environment external to the fan and its motor, for example to force air into or out of a vented case or housing containing electrical equipment or components, such as the case or housing of a personal computer as expressly contemplated in Lipman.

In addition, Applicants note that Smith does not disclose or suggest a closed fluid flow path extending into a first end of a rotor, completely through the rotor and out a second end of the rotor, then looping through one or more passages between the stator and the sealed casing to return to the first end.

Figure 1 of Smith shows four separate fluid flow paths within a dynamo-electric machine. A first fluid flow path enters the casing 12 from the left, proceeds through passages in the stator, and then is vented through the casing back into the atmosphere or environment surrounding the machine via an aperture located equidistant between the ends of the casing. A second fluid flow path enters the casing 12 from the right, and likewise proceeds through passages in the stator before being vented back into the surrounding atmosphere or environment through the aperture. The first and second fluid flow paths are not completely within the casing.

Figure 1 shows a third fluid flow path that is closed within the machine. Fluid circulating along this third path flows into the left end of the rotor, then out of the rotor through apertures near a middle of the rotor approximately centered between the axial rotation bearings, then back between the rotor and the stator through a passage 6, around

and through an end of a winding that extends beyond the rotor along the rotational axis of the rotor, and then back into the end of the rotor. A separate fourth flow path that is a mirror image of the third flow path is also shown entering the right end of the rotor. However, these third and fourth cooling fluid flow paths fail to extend between the stator and the casing.

Accordingly, Applicants submit that neither Lipman nor Smith disclose a rotary electromechanical device including a rotor, the rotor comprising a hollow hub and a plurality of magnet poles, *the hollow hub having at least one aperture at each end to form at least one first passage extending through the hollow hub*, a stator, a *sealed casing* surrounding the rotor and the stator, and *at least one second passage extending between the stator and the sealed casing and communicating with each end of the at least one first passage to form a closed path entirely within the sealed casing for cooling air flowing through the rotor*, as recite in Claim 1.

Lipman and Smith, when considered both separately and in combination, likewise fail to disclose or suggest a method for cooling a rotary electromechanical device having a rotor with *a first aperture at one end of the rotor, a second aperture at an opposite end of the rotor, and a first passage extending through the rotor along a rotational axis of the rotor and connecting the first and second apertures*, a stator and a *sealed casing* surrounding the rotor, wherein *at least one second passage is formed between the sealed casing and the stator and communicates with the first and second apertures*, the method and the stator so that cooling air that flows through the rotor travels in a *closed path*

entirely within the sealed casing, the method including *driving air into the first aperture, through the first passage and out the second aperture, and driving air from the second aperture through the at least one second passage to the first aperture*, as recited in Claim 12.

Lipman and Smith, when considered both separately and in combination, likewise fail to disclose or suggest an electric machine including a rotor, a stator, a *sealed casing* surrounding the rotor so that cooling air that flows through the rotor travels *through the rotor and then between the stator and the sealed casing in a closed path entirely within the sealed casing* and eans for driving air through a center of the rotor, as recited in Claim 14.

Lipman and Smith, when considered both separately and in combination, likewise fail to disclose or suggest a rotary electromechanical device including a casing, a stator, a rotor, the rotor including a hollow hub and a plurality of magnet poles, the hollow hub having at least one aperture at each end to form at least one first passage extending through the hollow hub, a shaft secured to the rotor in a non-rotatable manner, and bearings mounted on the casing for supporting the shaft, wherein the *casing is sealed* and surrounds the rotor and the stator so that *cooling air that flows through the rotor travels through the rotor and then between the stator and the sealed casing in a closed path entirely within the sealed casing*, as recited in Claim 21.

Dependent Claims 2-9, 11, 13, 15-20 and 23-24 are likewise allowable for at least the same reasons.

Withdrawal of the rejection of Claims 1-9, 11-21 and 23-24 under 35 U.S.C. § 103(a) over Lipman (Lipman) in view of Smith is respectfully requested.

Applicants respectfully submit that the application is in condition for allowance. Favorable consideration on the merits and prompt allowance are respectfully requested. In the event any questions arise regarding this communication or the application in general, please contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

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Date: 21 October 2003

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